Management Tips

Maryland Department of Agriculture

For Maryland Horse Owners Seeking Greener Pastures, Cleaner Streams & Healthier Horses

➤ For Help

For more information or free assistance in planning or implementing the best management practices described in this brochure, contact your local soil conservation district or University of Maryland Extension office listed below. Working together, we can make a difference for the Bay.

	Soil Conservation Districts	*University of Maryland Extension*
Allegany	(301) 777-1747, ext. 3	(301) 724-3320
Anne Arundel	(410) 571-6757	(410) 222-6757
Baltimore City		(410) 856-1850
Baltimore County	(410) 527-5920, ext. 3	(410) 771-1761
Calvert	(410) 535-1521, ext. 3	(410) 535-3662
Caroline	(410) 479-1202, ext. 3	(410) 479-4030
Carroll	(410) 848-8200, ext. 3	(410) 386-2760
Catoctin	(301) 695-2803, ext. 3	
Cecil	(410) 398-4411, ext. 3	(410) 996-5280
Charles	(301) 934-9588, ext. 3	(301) 934-5403
Dorchester	(410) 228-5640, ext. 3	(410) 228-8800
Frederick	(301) 695-2803, ext. 3	(301) 600-1594
Garrett	(301) 334-6950, ext. 3	(301) 334-6960
Harford	(410) 838-6181, ext. 3	(410) 638-3255
Howard	(410) 489-7987	(410) 313-2707
Kent	(410) 778-5150, ext. 3	(410) 778-1661
Montgomery	(301) 590-2855	(301) 590-9638
Prince George's	(301) 574-5162, ext. 3	(301) 868-9366
Queen Anne's	(410) 758-3136, ext. 3	(410) 758-0166
St. Mary's	(301) 475-8402, ext. 3	(301) 475-4484
Somerset	(410) 651-1575, ext. 3	(410) 651-1350
Talbot	(410) 822-1577, ext. 3	(410) 822-1244
Washington County	(301) 797-6821, ext. 3	(301) 791-1304
Wicomico	(410) 546-4777, ext. 3	(410) 749-6141
Worcester	(410) 632-5439, ext. 3	(410) 632-1972

MARYLAND
Smart, Green & Growing

Office of Resource Conservation
50 Harry S. Truman Parkway
Annapolis, MD 21401
(410) 841-5865
www.mda.maryland.gov

Financial assistance provided by the Coastal Zone Management Act of 1972, as amended, administered by the Office of Ocean and Coastal Resource Management, National Oceanic and Atmospheric Administration (NOAA)

Printed on recycled paper.

MDA 15.06.13

Riparian Areas

The term "riparian" refers to the buffer areas of moist soils and plants adjacent to streams, lakes, and wetlands. Riparian areas can be comprised of water-loving plants.

Grazing often removes important riparian vegetation and may cause streambank erosion and water quality degradation.

Tips To Prevent Water Pollution and Protect Riparian Areas

- Plant and maintain native trees, shrubs, and groundcovers along streams and around animal confinement areas to trap and absorb pollution-laden runoff before it reaches streams or groundwater.
- Fence horses away from water areas to protect streambanks, reduce erosion, and protect water quality.
- Provide water for horses at a watering trough in the pasture.
- Avoid applying fertilizers, herbicides, and pesticides in the buffer to keep pollutants from running into water.
- Locate livestock sacrifice areas away from streams and the downslope of your drinking water well.
- Use farming practices that reduce soil erosion and increase water infiltration such as filter strips and grassed waterways.
- Do not mix, apply, or dispose of weed control chemicals, used motor oil, or other toxic substances onto the soil or where they can leach into groundwater. Contact your University of Maryland Extension office or the Maryland Department of Agriculture for the best method of disposal in your area.
- Avoid excessive fertilizer and pesticide applications which may cause plant disease and become a potential source of groundwater and surface water pollution. Have your soil tested to develop a nutrient management plan which reflects the nutrient needs of your pasture. Contact your local soil conservation district for more information.

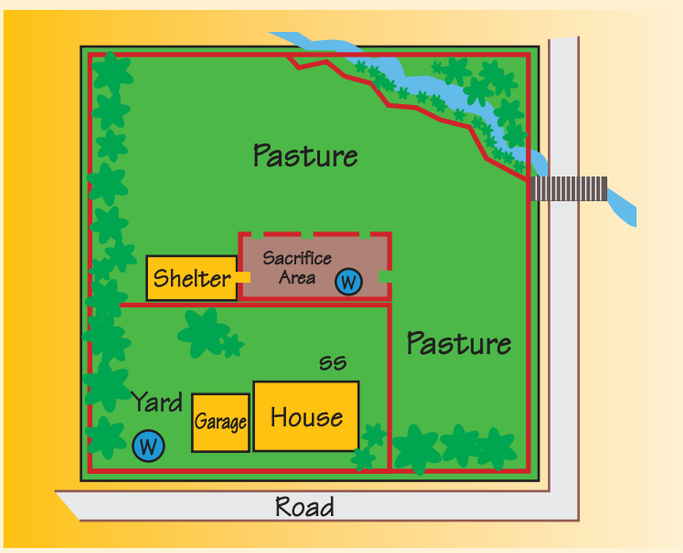
➤ Look At What You Have

Any landowner needs a management plan. Before developing your plan—look around, make a sketch, and take a few notes about your property. In your sketch, show or note:

- ☐ Property boundaries
- — Fences and sacrifice areas
- ▭ Buildings
- Ⓦ Water source
- SS Septic system and drain field
- ▭ Streams, wetlands, or ponds
- ▭ Bare ground
- ▭ Weeds
- ▭ Lawn, pasture, or cropland
- ✱ Trees or shrubs
- ✓ Soil type (available at your local soil conservation district)
- ✓ Neighboring land uses
- ✓ Flat or sloped ground

A watering trough located in the sacrifice area that is accessible from all pastures reduces streambank trampling. Shrub and tree plantings along streambanks prevent erosion, replace weeds and bare areas, and provide wildlife habitat. A hedgerow along the fence line creates a narrow thicket that is a barrier to horses and excellent wildlife habitat.

For more detailed information, visit **www.mda.maryland.gov** (See page 7 for site navigation help) Read the fact sheet, *Big Dreams for Your Horse Farm? Do Your Homework First!*

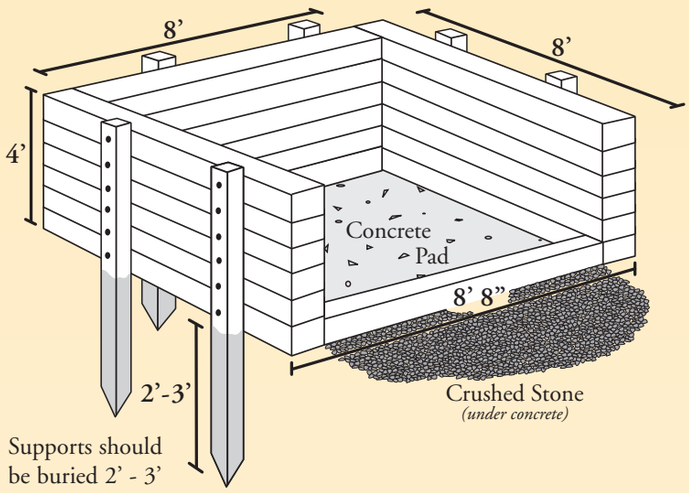


➤ Contents

Build A Simple Backyard Composting Bin

For two 3’ x 8’ x 8’ bins, the following equipment and supplies are needed:

- 76 – 8’ landscape timbers *(or similar wood)* post hole digger, 5” concrete and 5” CRG stone
- 140 – 5/16” x 5-1/2” lag screws
- Drill and bit *(1/4” x 5” long)*
- Plastic sheet or tarp to cover top
- Ratchet and socket set carpenter’s level
- Power or hand saw
- Tamping rod or similar tool



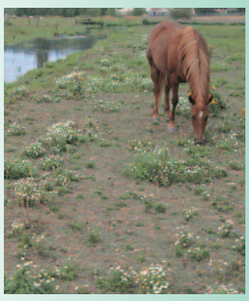
Supports should be buried 2’ - 3’ for stability.

***NOTE**: The number of timbers and lag screws will depend on the width of the timbers you purchase and how tall you wish to make your bins. Repeat design for two or three stage systems.*

Tips For Successful Composting

- Begin by building a pile of manure and stall waste that is at least 3’ x 3’ x 3’.
- Cover the pile or area with a roof, tarp, or sheet of plastic (a cover keeps it from getting too wet in the winter or dried out in the summer).
- Keep the pile as damp as a wrung out sponge—no wetter or drier!
- Add air to the pile by turning it by hand, with a tractor, or passively by inserting a few PVC pipes (or similar items) into the center of the pile like chimneys.
- When the pile gets as big as you want it for manageability, start a second pile and allow the first to continue composting.
- Add garden waste and lawn clippings to your compost. Don’t let grass clippings clump together—spread clippings out so air can permeate through them.

If you answered “yes” to any of these questions, you need a new pasture management program which will provide grass throughout the growing season, save you money in lower feed costs and vet bills, and protect your resources!



Continuous grazing allows weeds to grow where grass roots have been weakened.

Pasture rotation and good grazing management produce more grass, fewer weeds, and no bare ground.

➤ How Grazing Affects Root Growth

Overgrazing occurs when 50 percent or more of the grass plant is removed at once.

Overgrazing stops root growth and reduces grass production. It affects the vigor of the stand and is less drought resistant. This leads to higher management costs involving seeding and weed control.

Look what happens when you try to sneak in another 10 percent “harvest”—50 percent of the roots stop growing!

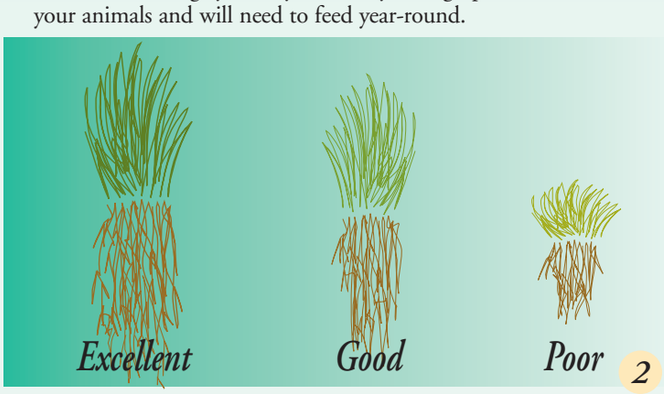
Percent Grass Plant Removed	*Percent Root Growth Stopped*
10%	*0%*
20%	*0%*
30%	*0%*
40%	*0%*
50%	*2 - 4%*
60%	*50%*
70%	*78%*
80%	*100%*
90%	*100%*

Notice how the root mass of these grasses decreases as pastures decline from excellent to good to poor condition.

For more detailed information, visit **www.mda.maryland.gov** (See page 7 for site navigation help) Read the fact sheets: *Guidelines for Seeding New Pastures and Renovating Old Pastures I and II; Is Your Pasture Broken?; Managing Pastures for Ground Cover; Management of Established Horse Pastures; Pasture Management for All Seasons; Seeding Small Acreage Horse Pastures; Vegetative Cover; and Vegetative Cover Photos – Problems and Solutions.*

Tips For A Successful Grazing Program

- Eliminate continuous season-long grazing.
- Subdivide large pastures into smaller pastures and develop a pasture-rotation grazing system.
- Rest and rotate pasture and, when necessary, turn your horses out into a sacrifice lot and feed them hay. Move livestock when 3” to 4” height remains. Do not regraze until grasses are at least 6” high (will take two to six weeks).
- During winter months hold animals in a confinement area.
- Allow rest periods and use a high-intensity, short-duration grazing system to rejuvenate poor pastures.
- Provide a water source for each pasture.
- Do not graze on wet, saturated soils.
- Horses do not need 24-hour access to feed or forage. Their nutrition needs can be met with only a few hours of grazing on good pasture each day. Confine animals for the remainder of the day to prevent overgrazing of plants and extend the forage available in your pastures.
- On limited acreage you may have only enough pasture to exercise your animals and will need to feed year-round.



Mud

Give Mud the Boot

Mud can be a big problem when animals congregate, especially around gates, watering troughs, barn entrances, and feeding pads. If mud in these areas is making you and your horses miserable, "heavy-use pads" are an easy and somewhat inexpensive fix.

West Nile Virus can affect horses and is carried by mosquitoes. Minimize standing water around your property to eliminate areas where mosquito larvae breed. Correct drainage problems in fields and eliminate standing water in containers. As little as one-half inch of water in a discarded can or container will support dozens of mosquitoes. West Nile Virus vaccinations are available for horses and if you suspect that your horse has been infected, consult with your veterinarian. Additional information is available from your veterinarian.

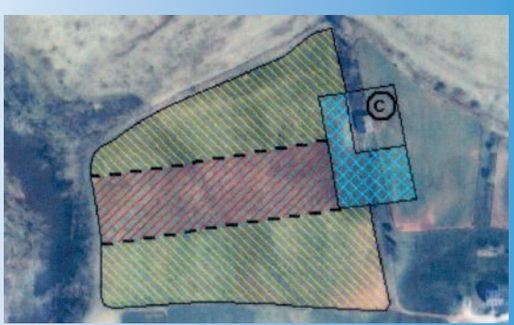
Manure

More Than a Few Reasons to Manage Horse Manure on Your Property

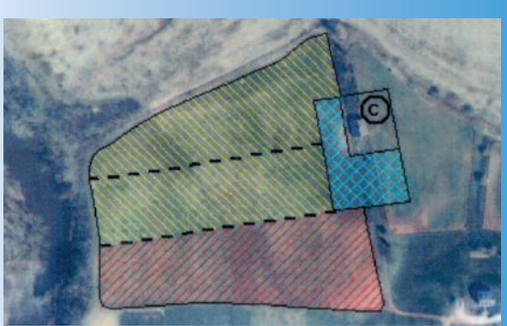
- Manure, like mud, creates a breeding ground for insects, especially filth flies. Insects are annoying at best and at worst, carry diseases or can cause serious allergies.
- Internal parasites hatch from the manure as often as every three days allowing for parasite reinfestation as soon as 24 hours after worming.
- Manure problems are inconvenient for the farm owner, can make chores difficult, and are unpleasant for neighbors.
- Manure left on the ground and in the loafing area creates more mud and conditions that may result in poor horse health. Drag manure periodically to accelerate decomposition.
- Remove manure from sacrifice areas.
- Nutrient runoff from manure has a negative impact on the environment. It contaminates surface water and groundwater, is detrimental to fish and other aquatic wildlife, and fertilizes aquatic weeds.

Gutter Talk

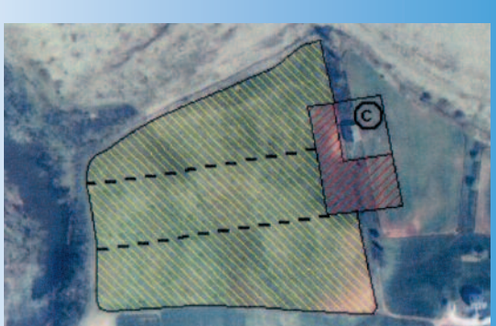
- Divert CLEAN rainwater away from animal confinement areas.
- Develop a roof runoff management system around buildings.
- Protect downspouts from animal and livestock damage—you can use heavy PVC pipe, electric fence, or a permanent barrier.



Grazing Paddock 2



Grazing Paddock 3



Bad Weather- *Graze this area anytime the pastures are too wet. Should be the best drained field.*

Watering Trough

A watering trough system is an essential part of your grazing and animal health programs.

As you divide your acreage into several pastures, establish separate water sources for each pasture or a single water source that is accessible from all pastures. **Clean, fresh water is essential for good animal health.** An option for watering trough development is to pipe water to a trough in each pasture or a centralized location. It is highly recommended (and may be required) that you fence horses away from streams to keep manure out of the stream, protect and maintain streamside vegetation, and control erosion.

For more detailed information, visit **www.mda.maryland.gov** (See page 7 for site navigation help) Read the fact sheet, *Water Harvesting: Water, Water Everywhere.*

➤ For Help

Obtain publications from county University of Maryland Extension offices on horse production, farming, gardening, and 4-H programs. Assistance is available from your local soil conservation district and USDA Natural Resources Conservation Service (NRCS) office to:

- Design mud management systems
- Design a grazing system
- Increase hay and pasture production
- Design a livestock waste disposal program
- Design stock watering facilities
- Help you meet water quality standards

Weeds Weed Control

Weeds spread quickly, so look for new weed patches on your property regularly. Act immediately to treat them by using one or more of the weed control practices listed below. Team up with neighbors to improve effectiveness. Remember, weed control alone is not enough. It is also necessary to modify the practices that caused weeds to become established in the first place!

Prevention. Good land management will help keep desirable vegetation healthy and weeds under control. Buy hay that contains seed for desirable plants. Look for weeds on your property and promptly remove them. Managing grazing will also inhibit weed establishment while promoting healthy development of pasture grasses.

Livestock Transport. Because livestock and wildlife can easily carry and spread weed seeds on their coats or in their feces, avoid moving livestock from a weedy area to a weed-free area. Some weed species, if eaten, will make livestock sick.

Mechanical Control. Mow weeds annually before they go to seed. Pull small weed patches and weeds near streams by hand.

Chemical Control. Herbicides may be expensive and can harm the environment if used incorrectly, but are effective when applied in the proper amounts and at the proper time of year. Read all label instructions carefully and follow directions. Keep herbicides away from water to prevent adverse health effects to you and your animals and to prevent pollution of streams and groundwater. Be sure herbicides will not reach and kill desirable trees and shrubs. Call your noxious weed control board to find out about hiring custom chemical applicators to spray your weeds. Contact the local University of Maryland Extension office for recommendations on herbicides for your particular problem. Call your local hazardous waste hotline for information on proper disposal of leftover chemicals. ***Remember the alternatives. Many annual and biennial weeds can be controlled easily without herbicides.***

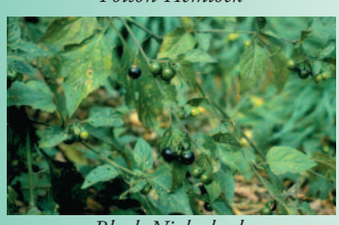

Purple Mint


Musk Thistle


Johnsongrass


Poison Hemlock


Shattercane


Black Nightshade


Canadian Thistle


White Snakeroot

➤ Some Toxic Weeds in Maryland

Plant Species	Poisonous Parts	Poison Symptom
Black Nightshade	Green berries and leaves	Marked thirst, diarrhea, loss of appetite, inability to stand, coma, irregular gait
Johnsongrass	Leaves and stems when plant is 12 inches or less	Slobbering or frothing, labored breathing, staggering, bleeding from mouth and nasal passages, muscle twitching
Poison Hemlock	All parts, especially leaves	Nervousness, twitching of muscles, salivation, lack of coordination, dilation of pupils, paralysis, death, birth defects
White Snakeroot	Leaves and stems	Marked trembling of skeletal muscles, lack of coordination, general body weakness, constipation, inability to swallow or stand
Purple Mint	Leaves, stems, and flowers	Affected animal stands away from herd, usually with its head down, breathing very hard and loudly, usually with froth around mouth and nose; pneumonia, death
Wild Cherry	Wilted leaves and young twigs	Nervousness, rapid and labored breathing, trembling or jerking muscles, blue color of mouth lining, bright red venous blood, bloating, bitter almond type odor in rumen gas, convulsions, and coma

➤ Maryland Noxious Weeds

The Maryland Noxious Weed Control Law requires landowners to eradicate or control weeds designated as noxious on all types of land. These are: Johnsongrass, Musk Thistle, Shattercane, Plumeless Thistle, Canadian Thistle, and Bull Thistle.

Know Your Weeds Before They...

- Choke out desirable plants.
- Reduce the productivity of your pasture and wildlands.
- Spread RAPIDLY!
- Affect the health of your livestock.

Ornamental landscape plants that are poisonous, such as azaleas, daffodils, rhododendrons and yews, are detailed in the following bulletin. Landscape plants that are planted too close to the fence can be toxic when eaten. Depending on your operation, there are other plants that may not be desirable.

For more detailed information, refer to University of Maryland Extension *Fact Sheet #721* and Home and Garden information sheet, *How to Deal With Plants Toxic to Horses,* by Raymond V. Bosmans, available from your local University of Maryland Extension office.

➤ For Help

Contact your local weed control coordinator or the Weed Management section of the Maryland Department of Agriculture to obtain a list of noxious weeds and recommendations on how to control them.

Contact your local soil conservation district for help with preventing weed establishment on your property.

Grazing

A Sample Schedule
For a One Herd Multiple-Pasture System

Overgrazed pastures offer little feed for horses and may increase incidents of colic or parasites. In many areas of Maryland, pasture grasses grow from mid-March through mid-October. Pastures should not be actively grazed until grasses reach six inches in height to ensure plant survival. Animals should be removed when the actively grazed areas in the pasture are down to three inches. The pasture should be allowed to regrow to six inches before the animals return. Pasture measurement sticks, available from soil conservation districts, are useful in checking pasture grazing heights.

Grazing duration times will vary, but if you rely on grass pasture heights, you will be practicing correct grass management and your pasture will stay pleasing to the eye. What's more, the frequency of reseeding will drop dramatically. A sacrifice area is essential for proper pasture management.

Rotating Pattern Example

Key:

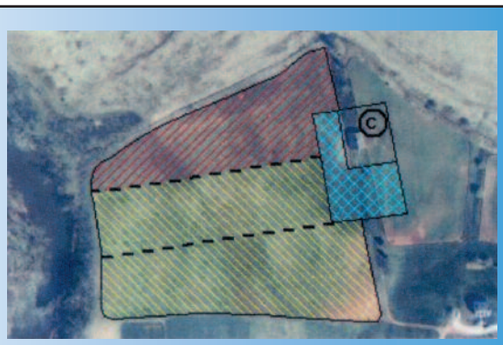
Grazing

Resting (Regrowing)

Sacrifice Area

© *Corral*

----- *Fence*



Grazing Paddock 1

For more detailed information, visit **www.mda.maryland.gov** (See page 7 for site navigation help) Read the fact sheet, *Give Mud the Boot.*

Tips

For Reducing Mud

- Fence animals out of creeks, wetlands, and ponds. Provide watering systems away from streams. Create water crossings or watering points.
- Practice good pasture management techniques so you have a healthy pasture. Avoid overgrazing and creating bare spots.
- Create a sacrifice lot and use it to take horses and livestock off pastures in the winter. Also use paddock areas when pastures are grazed down to 3" during the summer.
- Maintain a grassy area of at least 25 feet in width around winter paddocks. Increase this dimension if near a stream. The grass will serve as a filter for any runoff that occurs.
- Install gutters and downspouts on all buildings to divert water away from confinement areas.

➤ For Help

Contact your local soil conservation district and NRCS office for farm plans, educational activities, technical assistance, stream fencing, and watering troughs.

Food

Do You Have Enough Feed and Forage for Your Horse

Improved forage management is an asset to your horse.

Forage is what your horses consume by grazing. Forage productions are measured in animal unit months (AUMs). One AUM is equivalent to the amount of forage consumed by a 1,000-pound animal in one month.

➤ Poor Condition Pastures May Cause

- Colic and respiratory problems
- Dust problems
- Degraded water quality
- Poor nutrition which may result in
  - Poor coat
  - Weight loss
  - Parasites

For more detailed information, visit **www.mda.maryland.gov** (See page 7 for site navigation help) Read the fact sheets, *Rotational Grazing and Sacrifice Lots.*

For more detailed information, visit **www.mda.maryland.gov** (See page 7 for site navigation help) Read the fact sheet, *Horse Manure Management.*

Tips

On Disposal of Manure and Stall Waste

- Collect raw manure from sacrifice lot and stalls every 1-2 days.
- Compost manure and stall waste and apply to pastures, gardens, and flower beds during the growing season (March to September). You'll need a compost bin or appropriate area that is covered or tarped with access to water and a means to spread the finished compost, such as a manure spreader and tractor. Apply the compost according to your nutrient management plan or recommendations from University of Maryland Extension.
- Do not apply fresh, *uncomposted* stall waste directly to your fields.
- Any bedding material, including sawdust/shavings, can be composted. Your local University of Maryland Extension office can provide you with the correct recipe.
- Sell or give away composted manure and stall waste to neighbors, community gardens, local garden clubs, nurseries, and topsoil and composting businesses. You will need an appropriately sized, located and covered storage bin or area where people can pick up the finished compost, equipment, such as a tractor to assist with the loading, and advertising by word of mouth, posted flyers, and announcements in local newsletters and newspapers.
- Don't let manure become a mountain.

Soils Your Key to a Better Pasture

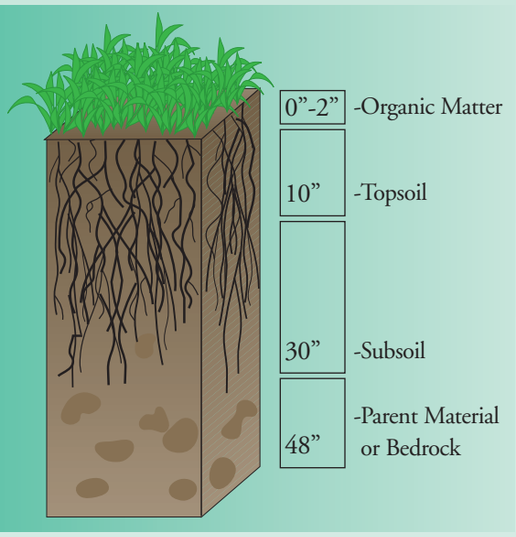
There is an old saying, "Take care of your soil and your grass will take care of itself."

Soils vary widely, even across your backyard and pastures. So to begin, you must know your soil type and its capacity. The amount of water that soil can hold will determine when you can put your horses in the field in the spring. It also affects grass yields in the summer. Soils determine:

- The filtering of animal and human wastes
- The amount of fertilizers and/or composted manure to apply
- The placement and durability of structures
- The presence of a wetland
- The rooting depths for plants and trees

A Soil Profile

A generalized illustration of a soil profile. Note the layers and their relative depths.



➤ For Help

For information about soil testing and nutrient management planning, contact your local University of Maryland Extension office. Soil type and pasture management information is available from your local soil conservation district. The county phone numbers of these agencies can be found on the back cover.

Pastures Are Your Pastures Properly Managed?

- Does your livestock have prolonged access to pastures in the spring before the grasses are 6" in height?
- Are your animals prone to colic or respiratory problems?
- Do your animals waste grass by not grazing to 3"?
- Do you manage all of your pastures in the same manner even though they may have different soils or slopes?
- Are your animals allowed to roam freely year-round?
- Are you paying excessively high feed bills or seeding costs?

Tips To Increase Your Pasture Production

A pasture is a grazing area for animals that is enclosed by a fence. Pastures are often planted with non-native plant species to increase their production. These pastures may need fertilizing, irrigation, and periodic replanting.

- Fertilize according to University of Maryland Extension soil test recommendations and/or your nutrient management plan based on forage needs. Believe the soil test! *Overfertilizing* may degrade water quality and cost money.
- Mow pastures to a uniform 3" height after grazing to stimulate equal growth of all plants.
- Drag or harrow to spread nutrient-rich manure. This exposes parasites in the manure to sunlight, which kills them and helps promote uniform grazing.
- Control weeds with a dense, healthy pasture. See page 6 for more details.
- Reseed thin areas as needed. Contact your local soil conservation district to determine the most productive seed mixture for your pastures.

➤ It is Finished!

Your compost could be ready to use in as little as one month's time depending how often you turn it and whether it stays damp. Most likely, it will take a couple months in the summer and three to five months in the winter when temperatures slow down the microbial activity. You will know your compost is ready when it has reduced in volume about 50 percent and the material looks evenly textured and crumbly like soil.

➤ Remember

Your compost system should smell "earthy," not unpleasant. Compost should feel moist and crumbly. Properly composted manure kills internal parasites. Odor and flies are associated with fresh manure and once manure is a part of the composting process there shouldn't be a problem. If your compost is not heating up or if it has a bad odor it means something is not being managed properly—check to be sure it is not too wet or too dry.

- Use only herbivore manure in your composting system. Carnivores, such as our household dogs and cats, may share similar pathogens with humans so their manure needs to be handled and treated differently.
- Don't place your composting structure where surface water flows can reach it.

➤ For Help

- Your local soil conservation district offers technical assistance in choosing a manure management option suitable for your situation as well as help designing a composting bin or manure storage area.
- Your local University of Maryland Extension office can help with manure management. They may offer classes on composting or manure management. Contact the Master Gardener program through University of Maryland Extension to locate a possible source for stall waste and bedding.
- Libraries have many books on composting.
- A good source for information on agricultural composting is the *On-Farm Composting Handbook,* distributed by:

  Northeast Regional Agricultural Engineering Service
  152 Riley-Robb Hall
  Cooperative Extension
  Ithaca, NY 14853-5701

  Phone: 607-255-7654, Fax: 607-255-4080
  Email: NRAES@cornell.edu.

For more detailed information, visit **www.mda.maryland.gov** (See page 7 for site navigation help) Read the fact sheet, *Composting Horse Manure*.

Planning

Maryland is a great place to live, and you can help keep it that way by learning how to have greener pastures, cleaner streams and healthier horses.

Are you wondering why you have to buy more feed each year as your land's productivity declines, leaving muddy ground and weeds?

Have you considered what you can do to help clean up the Chesapeake Bay and its tributaries?

Have you taken a close look at your property and seen areas that need attention, but aren't sure what to do?

There's a lot to know about owning and managing land, and even more to know when *you're raising horses*. This booklet will get you started and give you lots of information and ideas to help you maintain your property and protect the Chesapeake Bay and Maryland's tributaries. Wherever you live, you live in a watershed. This means that the actions you take affect water quality in your local stream, as well as everything downstream from you.

➤ Determine Goals For Your Property

Goals will help focus your planning process. Consider the following when defining your goals:

- What do you want to accomplish?
- How do you want your place to look in a few years?
- What uses can your land support?
- Will your livestock require grazing?
- Do you have good water quality?
- Are you concerned about something else? In the end you may have to modify some of your goals because they are not realistic for your property.
- Have you designed for chore efficiency?

Develop A Plan for Your Land

Once you've looked at your property and identified your goals, your soil conservation district can assist you in developing a farm plan to reach your goals. Remember, even if you like things just the way they are, you will need to *do something* to keep weeds out and keep the water clean! This booklet provides useful information on developing the many different parts of your management plan.

For more detailed information, visit **www.mda.maryland.gov** (See page 7 for site navigation help) Read the fact sheets, *Environmental Impact and BMP Benefits.*

➤ For Help

Your local soil conservation district has experts available to develop farm plans and offer technical assistance in implementing conservation practices. A list of the county phone numbers is on the back cover.

➤ A Healthy Riparian Area...

Is the key to a healthy stream system. Lush streamside buffers and wetland vegetation along the water's edge will:

Slow flood flows and reduce erosion and soil loss.

Secure food and cover for fish, birds, and other wildlife.

Keep water cooler in the summer.

Reduce water pollution by filtering sediment, chemicals, and nutrients from runoff.

Provide important breeding habitat for birds, fish, and other wildlife.

Promote stormwater percolation, slowly releasing it from the ground for longer season stream flows and groundwater recharge.

➤ For Help

- Your local UME office has information on soil testing and nutrient management planning.
- Be aware of changes to Maryland's nutrient management regulations:

  Beginning January 1, 2014, MDA will require a 10 to 35 ft. "no fertilizer application zone" adjacent to surface waters and streams. Horse owners will also be required to install certain pasture management practices under the guidance of SCDs to protect streams from livestock impacts.

  Beginning July 1, 2016, MDA will prohibit nutrient applications between November 1 and March 1 on the Eastern Shore and between November 15 and March 1 on the Western Shore. Horse owners with fewer than 50 horses will have until March 1, 2020.

Websites:

Maryland Department of Agriculture
www.mda.maryland.gov

Pasture Management Tips
Click the "Conservation" tab. Select "Technical Assistance" from the left navigation bar. In the "Links to Other Info" box click "Horse Pasture and Manure Information."

Nutrient Management
Click the "Conservation" tab. Select "Nutrient Management" from the left navigation bar.

Animal Health
Click the "Animal Health" tab. Select "Horses" from the thumbnails.

Plant Protection and Weed Management
Click the "Plants/Pests" tab. Select "Plant Protection and Weed Management " from the left navigation bar.

Mosquito Control
Click the "Plants/Pests" tab. Select "Mosquito Control " from the left navigation bar.

Hay and Straw Directory
Click the "Maryland Products" tab. Select "Hay and Straw" from the left navigation bar.

Maryland Horse Industry Board
Click on "Horse Industry Board" in the "Quick Links" navigation bar at left.

University of Maryland Extension
www.extension.umd.edu/

University of Maryland Equine Demonstration Farm
www.ansc.umd.edu/ERG

Forage
www.mdforages.umd.edu

Soil Test Information (Publications)
www.hgic.umd.edu

Natural Resources Conservation Service
www.md.nrcs.usda.gov
www.md.nrcs.usda.gov/programs/glci/glci.html

Adapted from: *Tips on Land & Water Management for Small Farms & Livestock Owners in Western Washington*

Photo credits:
University of Pennsylvania
Maryland Department of Agriculture
Maryland Natural Resources Conservation Service, USDA
Prince George's Soil Conservation District